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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,786	12/07/2001	Jan Lindskog	000500-277	7881

27045 7590 02/18/2005	EXAMINER
ERICSSON INC.	SAMS, MATTHEW C

ERICSSON INC.
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ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 December 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-25</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 March 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All   b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1.   The oath or declaration is defective. A new oath or declaration in compliance

with 37 CFR 1.67(a) identifying this application by application number and filing date is

required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> Non-initialed and/or non-dated alterations have been made to the oath or
> declaration. See 37 CFR 1.52(c).

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   Claims 5, 7, 8, 10-12, and 19-22 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the

subject matter which applicant regards as the invention.

. Claims 5, 7, 8, 10-12 and 19-22 contain the phrase "and/or" which renders the

claims indefinite because "and/or" implies three different limitation possibilities and fails

to distinctly claim the applicant's invention.

4.   Regarding claims 1, 3, 5, 8, 13, 17, and 18, the phrase "for example" renders the

claim indefinite because it is unclear whether the limitation(s) following the phrase are

part of the claimed invention. See MPEP § 2173.05(d).

Claims 1, 3, 5, 8, 13, 17, and 18 contain the phrase "e.g." which renders the claims indefinite.

5.   Regarding claims 1, 3, 5, 8, 13, 17, and 18, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1, 2, 7, 11, and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beach (US-6,067,297) and Larsson et al. (US-6,463,307 hereafter, Larsson).

Regarding claim 1, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37 and Col. 6 lines 54-59) Beach differs from the claimed invention by not showing a mobile terminal that requests for a

transition from an active state to a less active state, upon which the NIC requests the access point to be entered into a WLAN sleep state and then enters the sleep state after acknowledgement from the access point. However, Larsson teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 3 lines 48-60) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the ability of a mobile terminal to enter and exit a power saving mode of Larsson with the method of power saving in a mobile terminal of Beach. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal and lets the access point know to queue messages for the mobile terminal. (Col. 2 lines 33-64)

Regarding claim 2, Larsson teaches a method where the mobile terminal decides when to enter or exit the power saving mode and then informs the access point. (Col. 2 lines 41-50)

Regarding claim 7, Beach teaches an access point that disassociates mobile terminals without using a disassociation signal. (Col. 3 lines 22-28)

Regarding claim 11, Larsson teaches a mobile terminal that associates with the access point on transition from a power saving state to an active state. (Col. 5 line 52 through Col. 6 line 9)

Regarding claim 13, Beach teaches a method for power control in a mobile terminal used in a wireless local area network (WLAN) that comprises a wireless

network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37 and Col. 6 lines 54-59) Beach differs from the claimed invention by not showing a mobile terminal that initializes at a point of time later than a time-out interval due to inactivity in order to lower the system state. However, Larsson teaches a mobile terminal that initializes at a point in time later than a time-out interval due to inactivity in order to conserve power. (Col. 1 line 66 through Col. 2 line 5 and Col. 2 lines 10-23) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the ability of a mobile terminal to initialize at a point in time later than a time-out interval of Larsson with a method of power control for a mobile terminal of Beach. One of ordinary skill in the art would have been motivated to do this since an inactive mobile terminal conserves more battery power when in a power saving mode for a longer period of time. (Col. 2 lines 33-59)

Regarding claim 14, Beach teaches a method for power saving in which the mobile terminal goes from a power saving mode to an active mode when data is pending for transmission. (Col. 10 lines 28-35 and Col. 11 line 33 through Col. 12 line 7)

Regarding claim 15, Larsson teaches a timer in the mobile terminal used to initiate the mobile terminal to enter a power saving state. (Fig. 4 [406])

Regarding claim 16, Beach teaches a NIC that enters its lowest power consumption mode. (Col. 8 lines 35-42)

Regarding claim 17, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37 and Col. 6 lines 54-59) Beach differs from the claimed invention by not showing a mobile terminal that is operating in a low power mode and sends a request to the base station to be switched to a higher power mode. However, Larsson teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 3 lines 48-60) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the ability of a mobile terminal to request a transition from power saving mode to an active mode of Larsson with a method of power saving for a mobile terminal of Beach. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal, lets the access point know to queue messages for the mobile terminal and when to send the messages immediately. (Col. 2 lines 33-64)

8.   Claims 3, 4, 10, 12, 18, and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Beach (US-6,067,297) and van Bokhorst et al. (US-6,192,230 hereafter, van Bokhorst).

Regarding claim 3, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) or ad hoc network that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37, Col. 6 lines 54-59 and Col. 7 lines 4-7) Beach differs from the claimed invention by not showing a mobile terminal that requests for a transition from an active state to a less active state, upon which the NIC requests the access point to be entered into a WLAN sleep state and then enters the sleep state after acknowledgement from the access point. However, van Bokhorst teaches a method and apparatus for power saving in a mobile terminal ad hoc network where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 7 lines 15-56) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the ability of a mobile terminal in an ad hoc network to request to enter or exit the power saving mode of van Bokhorst with the method of power saving for a mobile terminal in an ad hoc network of Beach. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to enter or exit the power saving mode conserves the battery power of the mobile device and enables efficient use of the wireless medium by limiting the amount of messages being sent between mobile devices. (Col. 1 lines 23-25 and Col. 2 lines 7-35)

Regarding claim 4, van Bokhorst teaches a method where the mobile terminal decides when to enter or exit the power saving mode and then informs the access point. (Col. 6 lines 43-48)

Regarding claim 10, Beach teaches an access point that disassociates mobile terminals without using a disassociation signal. (Col. 3 lines 22-28)

Regarding claim 12, van Bokhorst teaches a mobile terminal in an ad hoc network that associates with network on the transition from a power saving state to an active state. (Col. 6 lines 43-48)

Regarding claim 18, Beach teaches a method for power saving in a mobile terminal used in a wireless local area network (WLAN) or ad hoc network that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, and an operating system compatible with the power states. (Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37, Col. 6 lines 54-59 and Col. 7 lines 4-7) Beach differs from the claimed invention by not showing a mobile terminal that requests for a transition from a less active state to a more active state, upon which the NIC enters a more active state. However, van Bokhorst teaches a method and apparatus for power saving in a mobile terminal where the mobile terminal can request to enter or exit the power saving mode and then informs the access point. (Col. 7 lines 15-56 & Col. 8 line 46 through Col. 9 line 27) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the ability of a mobile terminal in an ad hoc network to request to enter or exit the power saving mode of van Bokhorst with the method of power saving for a

mobile terminal in an ad hoc network of Beach. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to request to enter or exit a power saving mode conserves battery power for when the user needs the mobile terminal, lets the access point know to queue messages for the mobile terminal and when to send them immediately. (Col. 6 lines 43-51)

Regarding claim 23, Beach teaches a NIC that enters its lowest power consumption mode. (Col. 8 lines 35-42)

9.   Claims 5, 6, 8, 9, 19-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Beach and van Bokhorst, and further in view of Chen et al. (US-5,502,724 hereafter, Chen).

Regarding claim 5, the combination of Beach and van Bokhorst teach a method for power saving in a mobile terminal used in a wireless local area network (WLAN) or ad hoc network that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, an operating system compatible with the power states and where the mobile terminal can request to enter or exit the power saving mode. (Beach Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37, Col. 6 lines 54-59, Col. 7 lines 4-7, and van Bokhorst Col. 7 lines 15-56) The combination of Beach and van Bokhorst differ from the claimed invention by not showing a mobile terminal that requests a disconnection from the ad hoc network. However, Chen teaches a method for disconnection in a mobile terminal where the mobile terminal can request to be disconnected from another mobile terminal in an ad hoc network. (Col. 2 line 60 through Col. 3 line 6) At the time the invention was made,

it would have been obvious to one of ordinary skill in the art to incorporate the ability to request to be disconnected from the network of Chen with the method of power saving for a mobile terminal in an ad hoc network of Beach and van Bokhorst. One of ordinary skill in the art would have been motivated to do this since allowing the mobile terminal to enter or exit the power saving mode conserves battery power of the mobile device and it is quite possible that a mobile terminal would leave the effective connection range of the communication network. (Col. 2 lines 9-12)

Regarding claim 6, Chen teaches that the mobile device can receive disconnect requests or disconnect confirmation messages. (Col. 2 lines 60-67)

Regarding claim 8, the combination of Beach and van Bokhorst teach a method for power saving in a mobile terminal used in a wireless local area network (WLAN) or ad hoc network that comprises a wireless network interface card compatible with IEEE 802.11 power save procedures, an access point, an operating system compatible with the power states and where the mobile terminal can request to enter or exit the power saving mode. (Beach Col. 1 lines 32-41, line 65 through Col. 2 line 16, Col. 2 lines 35-37, Col. 6 lines 54-59, Col. 7 lines 4-7, and van Bokhorst Col. 7 lines 15-56) The combination of Beach and van Bokhorst differ from the claimed invention by not showing a mobile terminal that requests a disconnection from the ad hoc network. However, Chen teaches a method for disconnection in a mobile terminal where the mobile terminal can request to be disconnected from another mobile terminal in an ad hoc network. (Col. 2 line 60 through Col. 3 line 6) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the ability to

request to be disconnected from the network of Chen with the method of power saving

for a mobile terminal in an ad hoc network of Beach and van Bokhorst. One of ordinary

skill in the art would have been motivated to do this since allowing the mobile terminal to

enter or exit the power saving mode conserves battery power of the mobile device and it

is quite possible that a mobile terminal would leave the effective connection range of the

communication network. (Col. 2 lines 9-12)

Regarding claim 9, van Bokhorst teaches a method where the mobile terminal

decides when to enter or exit the power saving mode and then informs the access point.

(Col. 6 lines 43-48)

Regarding claim 19, Beach teaches a mobile terminal that is disassociated from

the access point without using a disassociated signal. (Col. 3 lines 22-28)

Regarding claim 20, Beach teaches a mobile terminal that is disassociated from

the access point without using a disassociating signal. (Col. 3 lines 22-28)

Regarding claim 21, Beach teaches a mobile terminal that associates with an

access point on transition from a sleep mode to an awake mode. (Col. 10 lines 28-35)

Regarding claim 22, Beach teaches a mobile terminal that associates with an

access point on transition from a sleep mode to an awake mode. (Col. 10 lines 28-35)

Regarding claim 24, Beach teaches a NIC that enters its lowest power

consumption mode. (Col. 8 lines 35-42)

Regarding claim 25, Beach teaches a NIC that enters its lowest power

consumption mode. (Col. 8 lines 35-42)

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US-5,465,392 to Baptist et al. regarding operating a wireless local network with power conservation

US-6,002,918 to Heiman et al. regarding power saving arrangement for a mobile unit in a network

US-6,292,508 to Hong et al. regarding a method and apparatus for managing power in a wireless network

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (703)305-0810 and after March 23, 2005 (571)272-7508. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703)305-4708 and after March 23, 2005 (571)272-7499. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MCS
2/15/2005

GEORGE ENG
PRIMARY EXAMINER